R E P O R T R E S U M E S

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TELEVISION UTILIZATION PROJECT DEMONSTRATION KIT 5, A CASE STUDY IN THE ELEMENTARY SCHOOL.

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NATIONAL ASSN. OF EDUCATIONAL BROADCASTERS

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AN OPERATING MANUAL FOR PART FIVE OF A SIX-PART SERIES OF KITS DESIGNED TO IMPROVE THE USE OF TELEVISION AS AN INTEGRAL PART OF THE LEARNING PROCESSES IN ELEMENTARY AND SECONDARY SCHOOLS IS PRESENTED. EACH KIT CONTAINS A FILM AND SUPPORTING SUPPLEMENTARY RESOURCE MATERIAL. SEQUENTIAL VIEWING OF THE SERIES IS NOT REQUIRED AS EACH KIT IS SELF-SUFFICIENT. THE KITS ARE PLANNED PRIMARILY FOR INSERVICE AND PRESERVICE USE. THE MATERIAL IS PRESENTED AT A LEVEL COMPREHENSIBLE TO BEGINNING TEACHERS AND TEACHERS-IN-TRAINING AS WELL AS TEACHERS EXPERIENCED IN A VARIETY OF INSTRUCTIONAL PROCEDURES BUT WHO ARE UNACCUSTOMED TO TELEVISION ASSISTANCE. IT MAY ALSO BE OF USE TO ADMINISTRATORS WHO ARE EXPLORING THE FEASIBILITY OF INSTRUCTIONAL TV OR WHO HAVE RECENTLY IMPLEMENTED ITS USE. EMPHASIS IS PLACED UPON THE RANGE AND VARIETY OF TV'S CONTRIBUTIONS TO MANY SUBJECT AREAS. THE CRITICAL ROLE OF THE CLASSROOM TEACHER AS A CATALYST IS STRESSED. A SERIES OF STEPS TO BE ACCOMPLISHED ON EACH OF THE 3 DAYS PRIOR TO THE SHOWING TO PRODUCE MAXIMUM PUPIL RECEPTION IS OUTLINED. (HS)

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(part 5)

TELEVISION UTILIZATION PROJECT DEMONSTRATION KIT 5

A Case Study in the Elementary School

NAEB NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS
WASHINGTON, D.C.

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
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CHAIRMAN'S MANUAL

TELEVISION UTILIZATION PROJECT

DEMONSTRATION KIT 5

"A CASE STUDY IN THE ELEMENTARY SCHOOL"

A kit of materials showing how one sixth-grade teacher used a television lesson on oceanology to teach some basic science generalizations, to arouse class interest in how and why man learns new things, to call upon personal strengths and to meet individual needs among her own pupils.

produced

for

National Association of Educational Broadcasters

by

Radio/Television/Film
The University of Texas

This project was conducted pursuant to a contract with the U. S. Office of Education under the provisions of Title VII National Defense Education Act

"The last 10 years have been the decade of exploration in educational television. NOW WE ARE ENTERING THE DECADE OF UTILIZATION."

. . . The Reverend John M. Culkin
Host-Narrator, Communications Demonstration Center
Hall of Education, New York World's Fair
(during the Fordham University Seminar on Educational Television)

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PART I

UTILIZING INSTRUCTIONAL TELEVISION

A group of six coordinated demonstration kits, each of which contains a film (with supporting supplementary resources) designed toward the improved use of television as an integral part of the learning process in elementary and secondary classrooms.

Other units in the series:

"WHAT TELEVISION BRINGS TO THE CLASSROOM"

"ROLE OF THE CLASSROOM TEACHER"

"PREPARING THE TELEVISION LESSON"

"PROMISING PRACTICES"

"A CASE STUDY IN THE ELEMENTARY SCHOOL

"EXAMPLES IN THE SECONDARY SCHOOL"

(For a description of the major content material in each of these units, please see page of this Manual.)

These Demonstrations Kits are distributed by:

National Association of Educational Broadcasters
Dupont Circle Office Building
1346 Connecticut Avenue, N. W.
Washington, D. C. 20036

OPEN LETTER TO VIEWERS

We're glad you have this kit...

and we hope you will see others in the series, because we believe these materials can be of practical value to you who are now working with or who contemplate working with television in the classroom.

Certainly your interest in investigating these resources represents an encouraging trend in education today...a health open-mindedness toward new approaches and different ways of coping, when our familiar, traditional habits...once so satisfactory...have proved inadequate or inappropriate. This becomes increasingly important as the swiftly-shifting dimensions of twentieth-century life continue to demand, in those who help youngsters learn, an alert capacity for enlisting new resources and putting them to work in the most efficient ways possible.

One of these resources is instructional television. As we explore ways of getting at its best performance, experience indicates that this helpful medium does not bestow identical blessings in all cases, and we are beginning to see why it may succeed in one classroom, fail in another, and appear to favor some teachers or school systems more than others.

The plain truth is that instructional television works best for those who know how to use it. The object of these kits is to help you join the ranks of those who do, for this is no mysterious body of knowledge, no complex system of new and hard-to-learn techniques. As you view these films and see television taking its place in the classroom, see good teachers working with television in effective ways, you will likely discover that you are already prepared to use it properly. The methods are those which all good teachers know well. Clues to some of the answers are to be found within you, yourself...in your own personal strengths and weaknesses, your particular capabilities, your special interests.

You need only acquire some new ways of thinking about yourself and your important work, some guidelines for organizing the help at hand into more useful patterns. I think you will find that in seeking out television's best ways of working, you will have discovered yours, too!

CLAIR R. TETTEMER
Project Director

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INTRODUCTION

These Demonstration Kits have been developed in answer to continuing, insistent requests from many people who need help in utilizing instructional television or in teaching others to do so.

Each kit contains a film and related materials dealing with a particular aspect of television's use in the formally-organized instructional routine of the classroom.

Although each kit is self-sufficient and may be used individually, the materials have been designed also as a coordinated whole, with each unit an extension of the others. Points which are considered extensively in one kit may be touched on only briefly in another. Certain fundamental emphases, basic to an understanding of instructional television's role in the educational process, are to be found in all of the kits. It is not essential to view the films in any particular number or sequence, but the total impact is greater and the total contribution more meaningful when all the films can be seen and seen in their numerical order.

The design of these resources and the plans for their use assume the availability of a competent educator who will

... make arrangements for the demonstration and assume responsibility for its materials,

... prepare the group for viewing the film,

... oversee the film presentation, and

... guide the activities related to the demonstration.

It is anticipated that this program chairman may have little or no background in television or its instructional uses.

The Kits have been planned primarily for in-service and pre-service use by special groups such as seminars, workshops, and college or university classes. Though these materials perhaps speak most directly to experienced classroom teachers skilled in a variety of instructional procedures but unaccustomed to working with television, they are intended as well for beginning teachers or teachers-in-training. They have much to say also to administrators who are exploring the feasibility of using instructional television in their school systems or who recently have inaugurated its use.

Differences in locale, experience, interests, and objectives among the viewers suggest that in planning the activities which extend the filmed presentation, the program chairman shall take these differences into account and plan the local presentation which he considers to be most effective.

The basic body of content in the films is limited to the instructional uses of television in elementary, junior high, and high school.

Care has been taken to avoid undue concentration on any particular area or areas in the curriculum. Rather, emphasis is upon the range and variety of television's contributions to many subject matter fields and to broad areas of understanding.

Emphasis in the films is on demonstrating utilization procedures as they are worked out in the classroom and its important activities, rather than on "talking ABOUT utilization while showing only on-screen lessons."

HISTORY OF THE PROJECT

The impetus toward learning suggested by television's introduction to the classroom was slowed by an early undertow of inexperience among those who prepared lessons for the new medium, those who presented the lessons on screen, and those who received them in the classroom.

By experimentation, careful observation, and realistic evaluation, however, these pioneers were finding increasingly effective ways of bringing the versatile new resource to the service of learning. What they were discovering was important to the ultimate success of a promising educational tool and thus to education in general. Certainly the contribution of television in the classroom could be strengthened considerably if others coming new to this "partnership" could start with such hard-won experience already at their fingertips.

There was no way to put it there. Personal demonstration by the relatively few who were skilled in utilization techniques was clearly unfeasible on any broad basis. The growing body of literature was helpful to a degree, but teachers could profit far more by seeing successful utilization procedures in process.

Seeking ways to close this "utilization gap," the National Association of Educational Broadcasters called together educational broadcasters, representatives of teacher-training institutions, consultants from school systems where instructional television was an established fact, and authorities in

the fields of education and school experimentation. Outspoken and widespread interest in utilization materials, reflected in this Seminar on Instructional Uses of Radio and Television (Purdue University, July, 1958) and from other sources as well, prompted further activity.

A long-term feasibility study, inaugurated and coordinated by Dr. Clair R. Tettemer, demonstrated an extensive and existing need for resources designed to improve the utilization of instructional television, and indicated the form which such resources should take. As a result of this study and a proposal made on the basis of its findings, the National Association of Educational Broadcasters entered into a contract with the U. S. Office of Health, Education and Welfare, Office of Education, Division of Educational Research, under Title VII of the National Defense Education Act, to produce such resources.

In March of 1963, Dr. Tettemer, As Director of the Project, and Members of the NAEB Utilization Project Committee, with Consultants from the United States Office of Education and the national headquarters of NAEB, met in Chicago to determine the scope, content, design, and intended audience of the proposed Utilization Project materials. A writer was chosen to prepare film treatments, based on outlines prepared by the Committee, and reflecting significant aspects of instructional television as revealed through the literature, through examples from classroom experience, and through consultations with television and school personnel.

Following approval of the film treatments by representatives of the U. S. Office of Education and the NAEB, bids were invited by the Office of Education, and a film contract was awarded to the motion picture unit of Radio/Television/Film at The University of Texas. Working with the Film Producer-Director, the Project Director, Members of the NAEB Utilization Committee, and the Consultants from the NAEB and the USOE, the writer prepared shooting scripts for film production and supplementary materials to be included in the Demonstration Kits.

The resources which you find in these kits are the end-products of much dedicated labor, of long and careful deliberation, and of constructive cooperation among a great many people widely separated by distance but united in their objectives.

These films and their supporting resources were designed and developed by:

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PHILOSOPHY OF THE PROJECT

Major premise: Instructional television can make significant and urgently-needed contributions to the nation's classrooms when wisely and efficiently used in a climate of constructive cooperation.

Supporting this premise, the Demonstration Kits were planned and prepared on the basis of these shared convictions:

... The classroom teacher is vitally important to successful utilization of instructional television.

> (For amplification of this principle, please see in particular the Demonstration Kit which is concerned exclusively with "Role of the Classroom Teacher." A brief description of its contents will be found in this Manual on page . Some excellent references in extension of this point are given in the annotated bibliography on page .)

... Television can be of value to the educational process at all levels of instructional support.

> (You will find an extension of this idea in all the Kits, but it is most comprehensively surveyed in the Kit titled: "What Television Brings to the Classroom." Please see also Appendix of this Manual, which describes the principal levels of support in some detail.)

... Differing levels of television support require differing degrees of classroom teacher participation.

... Instructional television is not intended to <u>replace</u> other instructional tools or methods, but to <u>take its place</u> in the total learning experience, as part of a carefully-coordinated approach to learning which employs the resource appropriate to the need, the instrument most appropriate to the objective.

... The role and functions of television in the classroom are not rigidly prescribed. Ideally, they stem from existing and defined needs and are tailored to the specifications which such needs suggest.

What television can do in a particular classroom or school system depends in large part upon what those involved with its selection and utilization need it to do and want it to do.

... Selection of televised instructional materials appropriate to the intended goals is an important aspect of utilization. It is equally important that administrators and teachers understand and remember.

... what these materials were designed and intended to do in the particular situation, and

... the inherent strengths and weaknesses of television as an instructional tool.

(For a consideration of these strengths and weaknesses, please see Appendix of this Manual.)

... The quality of instruction received through television is determined by the quality of instruction which is put into television. It is a MEDIUM of instruction.

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THE DEMONSTRATION KIT SERIES

Each of the six films contained in this series of Kits is designed to cover a specific area of Television Utilization. So that the user will have a better idea of what each film contains a brief description of each of the films in the six Kits is given below:

KIT NUMBER 1

WHAT TELEVISION BRINGS TO THE CLASSROOM

Purpose:

This film encourages the viewers to see television in its larger dimensions and in its proper context as an important instrument for the communication of ideas which, although a relatively new technology, is another in the long line of efforts to improve the learning process. Without suggesting that television is the "be-all-end-all" of classroom resources, that it is without problems, or that it is generally superior to all other learning resources, the film reflects some of television's unique advantages and pictures some of the things which television does with particular effectiveness.

Synopsis:

The Narrator suggests that we watch television doing some of the things it can do, bringing some of the things it can bring to the classroom, while you (the viewer) consider which, among these, would make the greatest contribution toward solving your problems, toward helping you, your classroom, or your school system move closer to your goals.

The major part of the material on screen in this film consists of illustrative excerpts from television lessons or special materials, based on instructional resources of outstanding quality which have been used in the schools. The Narrator discusses briefly, as the film progresses, what each excerpt illustrates and makes reference, where appropriate, to the nature of the problem

involved or the need fulfilled. These excerpts demonstrate the technical advantages of the medium which add impact, focus, and clarity to any presentation, in addition to television's capacity for bringing unusual or inaccessible materials into the classroom with a minimum of difficulty or delay. Reference is made also the the special learning opportunities which television can offer to special groups.

KIT NUMBER 2

ROLE OF THE CLASSROOM TEACHER

Purpose:

This film is designed to demonstrate that the role of the classroom teacher is crucially important to the maximum utilization of instructional television, and that the classroom teacher, in relinquishing the pressures of day-by-day presentational preparation, need not yield control of thelearning situation. By demonstrating the essential and varied functions for which the classroom teacher is responsible and for which the classroom teacher alone is qualified, the film seeks to develop an image of the classroom teacher's role as highly-specialized, contributing, and vital.

Synopsis:

The film reflects the role of the classroom teacher in the traditional classroom situation, as arbiter of classroom events and emphases. It suggests that the changing patterns of instruction involved in teaching with television may induce among some teachers a nostalgia for the familiar patterns, a nostalgia which can be dispelled by a realistic assessment of the new situation.

The film shows the classroom teacher working with the television teacher in a "partnership or specialties," with the on-screen teacher as the "presentation specialist," responsible for the common body of knowledge which all the pupils must have, and the off-screen teacher as the "classroom specialist," creator of the learning climate, director of the important classroom activities, responsible for adjusting the lesson to this particular class, to group needs and individual interests.

This film demonstrates the dimensions and quality of support which television can make available to the classroom teacher, enabling her to concentrate her skills and time on the important tasks of guiding, counseling, leading, and inspiring her students as they move toward learning.

CONTENT NOTE:

Illustrations in this film will be chosen primarily but not exclusively from the facets of the classroom teacher's role as they are exemplified DURING THE TELEVISION LESSON. Extension of the classroom teacher's role in preparing the students for the television lesson and for motivating and directing the immediate and long-range "follow-through" activities, which integrate the television lesson into the total instructional pattern, will be found in other Kits, with particular emphasis in:

... "A Case Study in the Elementary School" and

... "Examples in the Secondary School."

(See Appendix , for Responsibilities of the Television Teacher, Responsibilities of the Classroom Teacher, Responsibilities of the Learner.)

KIT NUMBER 3

PREPARING THE TELEVISION LESSON

Purpose:

This film is designed to demonstrate the special considerations involved in the preparation of a television lesson for the classroom, the extent of the time and care involved, the aspects of utilization represented in lesson planning and development. Events in the film reflect the steps in the preparation, rehearsal, and presentation of a television lesson, illustrating the cooperative effort essential to proper planning, the delicate balance to be found between "substance" and "showmanship," the necessity for teachers and production specialists alike to be concerned for and skilled in applying the significant criterion...not "How did it look on the screen?"...but "How much did it contribute to learning?"

Synopsis:

This film takes the viewers through the major steps in preparing a third-grade science lesson for the screen. In point of chronology, the preparation sequence here begins after the Teacher's Guide has been developed and the television teacher has been chosen. The film opens with an excerpt from a lesson on oceanography, with the teacher in a simulated undersea environment, pointing out the features of the "underwater village" and the underwater vehicles which man has devised to help him in moving from his natural human environment on the earth's surface and in adapting to the strange, new non-human environment under the ocean's surface.

The teacher pretends to take the viewers inside the house-laboratory, where she points out various survival features, and discusses how man uses his human intelligence to solve the new problems which he meets under the sea. Moving from the lesson as it appears on screen or in the television studio, to the other locales where preparation takes place, the film shows the Teacher's Guide as the link between the people who prepare the lesson and those who use it. We follow the television teacher as she consults with a content specialist, works with the producer-director and the graphic artist of the production staff, concerns herself with including important learning elements in the lesson, and goes through a start-stop rehearsal involving a portion of the lesson, to make sure that the lesson on screen will be clear, well-paced, correctly and effectively presented.

The film makes the point that the television production staff must be aware of the learning aspects of the lesson, just as the television teacher must develop an awareness of presentation techniques, and all must work together to produce a lesson with real value in the classroom.

CONTENT NOTE:

"Preparing the Television Lesson" deals with a lesson on oceanography at an approximate third-grade level. "A Case Study in the Elementary School" deals with a lesson on oceanology at an approximate sixth-grade level. Though these are complementary films, one demonstrating preparation of a television lesson for the elementary school, the other the use which an elementary classroom teacher makes of the television lesson, we have used different

aspects of ocean study and different grade levels to illustrate the correlation which is as important in planning television lesson series as in developing other aspects of the curriculum. Though both are science lessons concerning the ocean, the third-grade lesson explores the nature of the ocean as an environment, while the sixth-grade lesson is concerned with a more sophisticated idea; the technology by which man will avail himself of the ocean's resources to meet his own needs.

KIT NUMBER 4

PROMISING PRACTICES

Purpose:

This film is designed to demonstrate that many of the concerns which first come to mind when considering the use of instructional television are not insurmountable. Recognizing that problems do exist in integrating television into the existing school structure and curriculum organization, the film suggests that certain approaches and practices inaugurated successfully by other good educators may hold promise for schools now balked by obstacles which cut them off from valuable instructional resources.

Synopsis:

The film defines some of the problems and concerns which are interposing themselves between some school systems and the use of instructional television and illustrates briefly some of the "promising practices" which have been used successfully or which are being tried experimentally in an effort to by-pass these road-blocks on the way to improved instruction.

Attention is given to problems arising from considerations of time, of role identification, of curriculum, of costs, and of individual needs. As many of these concerns are complicated in nature and detailed in solution, the film seeks only to highlight the problems and to give brief glimpses into the nature of the solution. Its purpose in the main is to encourage those who have such problems to explore the possibilities further in the supplementary Kit materials and in other sources.

KIT NUMBER 5

A CASE STUDY IN THE ELEMENTARY SCHOOL

Purpose:

The film IS INTENDED to demonstrate some appropriate and specific ways in which a particular teacher in a particular class situation might use a particular lesson to work toward the stated objectives of the single lesson and the lesson series, and toward other, compatible objectives which she felt to be desirable for her own class and its individual members. It IS NOT INTENDED to suggest that the utilization procedures illustrated in the film represent the only ways to use television lessons in the classroom, or even the best ways to use the examples lesson in all classroom situations.

In offering this telescopic view of acceptable television utilization procedures, the film is not offering a "slice of life," but is seeking to reinforce the viewers' realization that learning does not leap automatically from the screen to the child, that utilization involves far more than arranging for pupils to view a televised presentation in the classroom, and that the value of television in education is directly related to the way it is USED.

Synopsis:

In a SELECTIVE SEQUENCE OF HIGH POINTS from procedures which, of course, in the time scale of the actual classroom, would be of longer duration and much more gradually paced, the film reflects the ways in which a sixth grade science teacher might use an elementary science television lesson on oceanology, selecting methods appropriate to her goals and to the needs and interests of her pupils.

The film shows only a portion of the television lesson, preferring to devote the limited film time to concrete examples of utilization techniques. The viewers observe as the teacher prepares her pupils for the lesson, uses it to lead them into a broader area of understanding, and encourages and guides group and individual activities important to the personal growth and development of these children she knows so well.

KIT NUMBER 6

EXAMPLES IN THE SECONDARY SCHOOL

Purpose:

This film is designed to reflect some of the ways in which good teachers in secondary schools may help their students use instructional television as a resource for self-education. The film demonstrates many of the same general principles of utilization illustrated particularly in the films: "A Case Study in the Elementary School" and "Role of the Classroom Teacher." However, its special purpose is to consider the aspects of utilization involved in the regimented time schedule and the specialized subject areas of the secondary school, when the same classroom teacher is not with the students for the major part of the school day, and to emphasize utilization procedures most appropriate to the students' increasing capacity for self-directed learning.

Synopsis:

The viewer is given brief examples of classroom preparation for television lessons in several subject areas at various grade levels, and brief samples of "follow-through" activities related to other lessons in other subject areas at various levels of instruction. Major emphasis in this film is upon the full spectrum of learning experiences into which an imaginative teacher might guide the members of a high school English class, using as a springboard a provocative television lesson on the far-reaching implications of the investigative process.

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PART II

SUGGESTIONS FOR USING THIS KIT

"A CASE STUDY IN THE ELEMENTARY CLASSROOM"

DESCRIPTION OF THE KIT

This Kit contains the following resources:

A FILM

16 mm. sound film, in color, approximately 30 minutes in length. The film title and the title of the Kit are the same: "A Case Study in the Elementary School."

A MANUAL

This is for you to use, as Program Chairman, to assist you in developing a fruitful demonstration based on the film which accompanies this Kit. Careful study of the Manual and other materials will enable these resources to work for you in their most efficient ways, toward the objectives which you have in mind for your class or viewing group.

SUPPLEMENTARY MATERIALS

A sample Teacher's Guide

This is to give your viewers a more comprehensive picture of what a Teacher's Guide contains and how it is organized. PLEASE RETURN THIS WITH THE KIT.

Outline of Utilization Procedures

This is a replica of the outline given in the Manual. It is for you to keep and to duplicate, if you wish, in order that members of your viewing group may have a record of the utilization methods employed by the teacher in this film.

Notes for the Viewers

This also is sample material, which you may wish to duplicate and distribute to the viewers of this film, for their future reference in recalling the principles and practices reflected in "A Case Study in the Elementary School."

PREPARING FOR THE DEMONSTRATION

We suggest that you first read the MANUAL carefully.

It will be best if you begin with the GENERAL SERIES SECTION (PART I) which has reference to the Television Utilization Demonstration Kit Series as a whole. From the GENERAL SECTION you will learn why this series has been developed in this way...the philosophy on which it is based...the sequence of ideas in the films...their relationship to one another...the reasoning behind this organization...and their combined implications for successful utilization of instructional television in the classroom. THIS SECTION IS THE SAME IN ALL THE MANUALS which accompany the various Kits.

IT IS IMPORTANT TO REMEMBER that each of these films, though complete within itself and capable of being used alone, is also part of a larger complex and an extension of the other films in the series. An aspect of utilization which may be treated only briefly in one film will be developed more fully in another. You can help your viewing group to see this film in its proper context if you are familiar with the content and special emphases of the other films and the contours of the total series.

IN THE APPENDICES are found special materials not necessarily essential to this demonstration, but helpful in orienting you and your viewing group to the general field of educational television, the place which instructional television has in the field, and the levels at which instructional television offers support.

The next step in preparing for the demonstration is to study THIS SPECIFIC KIT SECTION (PART II) which is relevant primarily to the particular film and materials IN THIS KIT. Though some of the references may be applicable to other units in the series, these resources have particular pertinence to "A Case Study in the Elementary School."

It is hoped you will be able to preview the film itself. However, if this is not possible, YOU CAN GET ESSENTIAL INFORMATION about the NATURE AND ORGANIZATION OF THE FILM, ITS PURPOSE AND DESIGN, the GENERAL STATEMENT it makes, and the UTILIZATION PROCEDURES DEMONSTRATED, by reading the pages which follow.

You will be better prepared to help your viewers realize maximum returns from this experience if you know, for instance, what this film is intended to be and do and what it is not intended to be and o; why this particular lesson at this particular grade level was chosen for demonstration; what kind of teacher-pupil-school situation was used as a model; and what principles of utilization are represented.

WHAT YOU DO WITH THIS KIT...

... like utilization of a television lesson, depends upon your specific objectives for your particular group, as well as upon the general objectives toward which the Kit was designed.

- Who are the members of your group?
- For what purpose are they watching the film?
- What do you want them to do or to be able to do as a result of this experience?
- Do the viewers themselves know why they are seeing the film and what you expect them to get from it?
- What are the best ways to use this material to accomplish your aims?

Your entire demonstration will have much more meaning for the participants if you have the answers to these questions clearly in mind before you determine your procedures and if you make the answers clear to the viewers before they see the film.

It would be wise to give some thought also to the personalities in your viewing group, insofar as they are known to you, and to your own experience, attitudes, and capabilities. All of these considerations have a significant bearing on what you do and how you go about doing it.

Whatever you do, there is certain basic...

EQUIPMENT YOU WILL NEED...

... A 16 mm. sound-on-film projector, preferably with easy start-stop or back-up mechanism

... A projection screen, properly placed for unimpeded viewing by all participants

... A lectern or table for your presentation, with a sound system where necessary

... A take-up reel for EACH of the films you will be showing

... A room which can be darkened for proper viewing

... A projectionist if you do not plan to fun the film yourself

... A lectern light, small clamp light, or small flashlight for reading your notes while the film is in progress

... This Manual for ready reference

... A small table for displaying the Supplementary Materials

ONCE YOU DEFINE WHAT YOU WANT TO ACCOMPLISH...

... by using the Demonstration Kit(s) with this particular group or class, bearing in mind your own experience, your personal preferences, and the methods most suitable for you, you may want to consider a variety of . . .

POSSIBLE PROCEDURES FOR USING THE KIT

(1) You may want simply to give a short introduction and orientation to the film, show the film, and follow it with a brief discussion or question-and-answer period.

If so, these suggested questions may be helpful to you in sparking the discussion:

(a) Will you name (in a general way) some good preparation activities for a television lesson. (Such as review of preceding material, survey of the content outline for the year, unit, or series, vocabulary work, studying the material in the text, listing questions for which pupils need answers, discussion, library reading, practice in viewing skills, defining viewing objectives, etc.)

(b) Please name (in a general way) some good follow-through activities. (Such as answering questions, framing thought questions, defining and discussing the main ideas in the lesson, drill, experimentation, problem solving, discussing reactions to the lesson, testing, writing special material, preparing related art work, etc.)

(c) Do activities for preparation and activities for follow-through differ in KIND? Can the same activities be used for either purpose? Where does the basic distinction lie? Can you suggest activities which would be appropriate for one purpose but not for the other?

(d) What would you have done with this lesson?

(e) How do you react to what the teacher did?

(f) What do these procedures suggest to you about Mrs. Arnold as a teacher?

(g) What do they suggest to you about her class as a whole?

(h) In a class of this size, would only five children normally be involved in individual activities? Would the teacher direct the majority of her questions to these same five children? Why do you suppose this happens in the film?

(Limitations of time...need to establish identity of each child and develop a characterization in a few VERY BRIEF sequences, in order that the individual activities will have more meaning to the viewers.)

(i) What about other areas? How could you utilize this television lesson in subject areas other than science?

(j) Name specific introductory and follow-through activities for your own subject field. (Perhaps it will help to have a particular lesson in mind and a developmental level as well, such as a fourth-grade lesson on how the Dutch use their land.)

(k) Do your pupils live on the ocean or inland? What differences would this suggest in the activities?

(l) Can you see what Mrs. Arnold was trying to do and how she has done it? Why, for instance, did she use music and painting to prepare her pupils for a SCIENCE program? Why did she consider it important for them to explore man's reasons for learning new things?

(m)(If your class or group has seen the film "Preparing the Television Lesson, you might ask this question:) Do you think this television lesson opens doors to utilization? Do you think it requires, suggests, or invites any particular activities in preparation or follow-through? Do you think an inexperienced teacher could use this lesson effectively? Please give reasons for your answers.

(n) Please comment on the amount of class and pupil time Mrs. Arnold devoted to utilizing this one lesson. Is this customary in utilizing a single lesson? How could she use so much time? (She is in control of the learning situation for the major part of the school day with these same children...and her approaches can be more comprehensive, her schedule more flexible for that reason.) Why did she use so much time? Do you feel that what the children gained from the lesson justified this time and effort? Was this a special situation or did Mrs. Arnold always go into such depth?

(o) Using your own experience as a measuring stick, do you feel that the abilities of these pupils, as demonstrated in their group and individual projects, were at the right level? Do you think they were consistent with the developmental level assumed by the television teacher?

Please give specific reasons for your answers.

(If viewers found the ability level of the pupils, as reflected in the film, to be high, you might ask them to discuss possible reasons for this: "learning climate" of the classroom, Mrs. Arnold's skills as a teacher, background of the pupils, quality of the school and nature of the community in which the school is located, etc.)

(If viewers found the developmental level reflected by the television lesson and that reflected in classroom activities to differ in any appreciable degree, ask them to suggest what this implies as a factor in utilization. (Occasional necessity to adapt the lesson on screen to the developmental level of the class. This occurs because there is a wide range of developmental levels among children in the same grade but in different schools, and even, of course, among different classrooms in the same school, to say nothing of the range among children in the same classroom.)

(p) Has anyone in this group ever used television in the classroom as a teaching resource? To what extent? How? Give specific examples.

(g) (Where this is a pre-service group, some of the viewers likely have experienced instructional television as pupils.) What experience have you had in learning with television? How do you feel about its contributions to your own learning? What in particular stands out in your memory about it?

(r) What, to you, are the high points, the strengths of utilization, in this film?

(s) What areas of classroom procedure shown would you ADAPT to your own style or purpose of teaching in a similar situation?

(2) Members of the group may want to explore (through discussion or reading) for answers to questions of their own:

(a) What can I, as a teacher, do to encourage favorable reactions to television among mystudents? Is my own attitude important in this matter? In what ways?

(b) What should I, as a teacher, be doing while the television lesson is in progress?

(c) What have I learned in using films in the classroom that can be carried over to the use of television lessons?

(d) How does film differ from television as an instructional resource?

(e) How has (will) my role as classroom teacher been (be) affected by the use of television lessons?

(f) Should I summarize what the television teacher presented?

(g) Should every teacher use the same follow-through?

(h) Should I try to do everything the Teacher's Guide suggests for follow-through? Would there ever be a time when I would not do anything suggested in the Teacher's Guide?

(f) What class arrangements could be used to make possible individual help for students with special difficulties, without disturbing the whole class?

(j) How much technical knowledge of television does a classroom teacher need, to use television lessons properly?

(k) Who decides whether my school will have television in the classrooms and on what basis or bases is the decision made?

It is, of course, not necessary to cover all of these questions at the time of the Demonstration, and you (or the members of your group) may have questions of your own you would prefer to ask. However, it is hoped that viewers with unanswered questions may be directed to a satisfactory source of information: reports from other members of the group, further discussion, experienced people outside the group, available literature, OR OTHER FILMS IN THIS SERIES.

YOU MAY PREFER OTHER WAYS OF USING THE DEMONSTRATION KIT:

Perhaps you will find it desirable to:

(1) Have the class or group viewing the film make alternative suggestions for class activities (preparation, immediate follow-through, long-range follow-through) utilizing THIS SAME LESSON.

(2) Suggest or demonstrate (by a verbal or written description, by acting out, by using a Teacher's Guide, or by other films) EXCERPTS FROM OTHER TELEVISION LESSONS in this or other subject areas, and ask the members of the class or group to develop utilization procedures appropriate to specified goals. These may be developed by the group in discussion, by sub-groups who will act out the procedures, or by individuals who will report verbally or in writing.

(3) Ask the members of the group or class to DEVELOP LESSON EXCERPTS WITH SPECIFIED GOALS, for which other members of the group may develop and demonstrate the various kinds of utilization procedures.

(4) Show other films in the series and discuss with the group or class the correlations found in the films, and how elements in one reinforce, extend, or complement elements in another.

(5) Ask the members of the group or class to evaluate the film and the procedures demonstrated in the film. Do they approve of what Mrs. Arnold did? Why? Why not? Assuming the same general procedures, is there anything they would have done differently? What is their evaluation of the television lesson?

(6) Ask members of the class to participate in a role-playing situation in which the television teacher has come to visit Mrs. Arnold's class. Do the participants seem to know why the television teacher has come? Does the conversation between the television teacher and Mrs. Arnold show a firm grasp of this important evaluative procedure?

Discuss with the group or class the importance of evaluation to effective utilization. What is its function in the utilization process? How should the television teacher and Mrs. Arnold relate to each other? How can this help both teachers? In what spirit should both teachers approach the "critical function" essential to effective "team" or "partnership" teaching?

In the relationship between Mrs. Arnold and the television teacher (in the role-playing situation), does each teacher seem to understand the nature of her own role? Is such definition of the two roles evident in the action on screen?

No doubt you will think of other ways to use these materials. No one way is best in all situations. However, there are certain understandings which the viewers should have, no matter what procedure is used for the over-all experience, if they are to view this film intelligently and in proper perspective. It is hoped that in preparing your class or group to see the film, you will give the members these. . .

GUIDELINES FOR EFFECTIVE VIEWING

... The viewer's perspective, as the film is designed, is that of an experienced classroom teacher who has had little or no opportunity to work with television in the classroom. Please remember, as you watch the film, that your viewpoint is assumed to be that of a teacher wholly familiar with classroom procedures, but unskilled in the use of instructional television.

... Please bear in mind that the film does not attempt to mirror the full reality of the classroom. It is a telescopic version of what takes place, a model foreshortened in time and pace and process, a selective sequence of high points offered only to SUGGEST the full and complete routines of the classroom.

... If the question and answer sequences seem a trifle "pat," if the children appear to arrive at conclusions too promptly, the thoughtful viewer will have little difficulty in realizing that these scenes are merely indicative of approaches which, if allowed to run their normal course, would far exceed the film time allotted to all the classroom sequences.

... Please remember that to demonstrate the aspects of utilization which deal with individual differences, it has been necessary to establish in a few VERY BRIEF sequences the identities of several specific children and to indicate within highly rigid time boundaries the essential facets of their personalities. If Mrs. Arnold's concern for special needs, interests, and abilities among her pupils is to have any meaning for you, the viewers. Scott, Bryan, David, Alice and Laura are only a small REPRESENTATIVE GROUP OF PROXIES FOR ALL THE INDIVIDUAL CHILDREN IN THE CLASSROOM, as they are shown in direct interaction with Mrs. Arnold and as they are involved in group and individual activities.

... The same limitations of time dictated a choice between showing the entire television lesson and concentrating on the activities used by Mrs. Arnold to integrate that lesson into the total learning experience in her classroom. Please bear in mind, therefore, that YOU ARE NOT SEEING THE ENTIRE TELEVISION LESSON ON SCREEN, and that many of the elements which contribute to the lesson's validity and effectiveness are incorporated in the portion not seen.

... "Preparation"...lesson..."immediate follow-through"..."long-range follow-through" are not the separate and distinct processes which these specific terms make them sound. They are the merging and interwoven elements of a total process by which the classroom teacher and all the other resources of the classroom help children learn. These terms are used only for clarity in communicating about these elements.

... As you view this film, please bear in mind your reasons for doing so, any special points or procedures for which you are asked to be alert, and what you are expected to do as a result of the viewing experience.

... Please note any aspects of the filmed demonstration which trouble or confuse you or with which you disagree, in order that you will be prepared for clarification and evaluation later.

... Please watch the film with a flexible and receptive attitude. The classroom situation, the procedures here may be different from the ones with which you are familiar, but they may suggest ideas to you which you can adapt to your own classroom or which you may find helpful in the future.

PLEASE SHARE WITH THE VIEWERS ALSO

... A synopsis of the entire television lesson. (This is included in the materials concerning the lesson which follow in the next few pages of the Manual.

... A sample Teacher's Guide sheet. (Included in the materials following this page.

... Vocabulary list (on the chalkboard in the classroom)

... Main ideas in the lesson (on the chalkboard in the classroom)

ADDITIONAL PROGRAM AND MATERIAL SOURCES

A Guide to Films, Kinescopes, and Videotapes Available for Televised Use.

New York: National Instructional Television Library, Spring, 1962.
The Guide describes a total of 169 television courses available for use by educators in the United States. It is also a catalog of sample materials available from these sources. Each sample contains a 16-mm film of one representative lesson and two sets of related printed materials.

National Educational Television and Radio Center, 10 Columbus Circle, New York 19, New York
The coordinating center for the National Educational Television Network. May be contacted for information concerning N.E.T. membership stations and available television series.

N.E.T. Film Service Catalogue. Bloomington, Ind.: Audio-Visual Center, Indian University, 1962.
This is a catalog of additional N.E.T. educational films available to educators over and above those listed in the N.E.T. Instructional Television Materials Guide.

1962-1963 Catalogue of MPATI Courses. Purdue, Ind.: Midwest Program on Airborne TV Instruction, Inc., 1962
The booklet describes 24 courses which are available from MPATI, each covering a school semester or a full academic year of instruction in a subject. It contains information about the content of each course, the intended grade level, and the television teacher, plus details about rental charges and how sample taped resource-material units may be obtained for preview.

MAILING INSTRUCTIONS AND RESPONSIBILITY

It is important that this Kit be returned immediately after use. Detailed instructions and labels are contained in an envelope in the front of this Manual. The borrower must make every effort to safeguard this Kit while in his possession. If the kit should arrive in a damaged condition, he should notify the post office department and the NAEB at once. If the Kit or film is damaged while in your possession, a damage report should be sent to the NAEB. If copies of this material are needed, send to the NAEB for them. DO NOT KEEP ANY OF THE PARTS OF THE KIT EXCEPT THOSE INDICATED TO BE DISTRIBUTED.

ADDITIONAL INFORMATION

FOR THE

PROGRAM CHAIRMAN

ABOUT THE FILM

GENERAL STATEMENT OF THE FILM:

Good elementary classroom teachers should USE television lessons, not just FOLLOW them. We cannot count on automatic learning just because the child is face-to-face with an instrument of learning or just because he has witnessed a commendable presentation. Television, like any other instrument, can bring the lesson and the child together. The classroom teacher must apply the glue which makes the lesson stick!

It is not enough for the classroom teacher to be "an echo" or a "caboose" simply parroting or re-teaching the Lesson content. As manager of the learning situation, the classroom teacher has the primary responsibility for clarifying, extending, reinforcing the concepts involved.

The television lesson can be "geared" to any of the many methods which teachers know so well; so can the preparation for the television lesson and the follow-through.

How each teacher in the classroom makes his or her glue, then depends upon what is to be accomplished, what objectives the teacher has in mind, what kind of learning is sought (skills, knowledge, attitudes, values, understandings, and/or appreciations.) It depends upon the purpose of the television series as a whole, the purpose of this specific lesson (as specified in the Teacher's Guide), and this teacher's own purposes in using the lesson.

And it depends, in important measure, upon this particular teacher's personal "glue" recipe...compounded of the teacher's special touch and personality, the teacher's own skills and strengths, the available resources, the procedures which have proved effective in personal experience, the activities geared to the abilities, interests, and needs of a particular class or even to particular pupils within the class.

NATURE OF THE FILM

The purpose of this film is to demonstrate effective utilization procedures by showing how one sixth-grade science teacher might use a television science lesson in oceanology to reinforce important science concepts, to introduce a broader area of understanding, and to motivate group and individual activities appropriate to the needs and interests of her particular pupils.

The film is documentary in form, with a Narrator to set the scenes, to make particular points, and to provide transitions between sequences.

The viewer sees a portion of the television lesson, then is taken by flash-back to the classroom a day or two before the lesson, to see how the teacher prepares her class for the presentation to come. The viewer rejoins the class for the concluding sequences of the television lesson, observes the class activities immediately following the lesson, and then is enabled to move ahead in time to see with what long-range utilization activities the impact of the lesson is extended and reinforced.

THIS LESSON IN THIS AREA AT THIS LEVEL

was chosen in consultation with 15 elementary teachers, from three schools, representing grades three through six. These teachers were chosen because they use television effectively in their own classrooms. These teachers felt that a single representative utilization sequence from the elementary school probably should be in the area of science, as it is in science that instructional television makes one of its most significant contributions to elementary schools. After careful consideration, the teachers decided that the lesson should be at the sixth-grade level, as utilization procedures at this upper elementary level would have something of value to other teachers in the lower grades, whereas utilization procedures appropriate to the third grade (the level of the lesson on oceanography in "Preparing the Television Lesson) would have fewer implications for teachers in higher grades.

Oceanology, the technology by which man seeks to avail himself of the ocean's resources, was chosen as a relatively sophisticated aspect of ocean study, and ocean study was recommended as a contemporary area of science with high fascination for youngsters, an area which has developed too recently and rapidly to be covered adequately in the textbooks. The teachers felt this quality immediacy represented one of the most valuable contributions which television can make.

THIS TEACHER,
THESE PUPILS
AND THEIR SCHOOL

Utilization procedures reflected in this film were developed in consultation with a sixth-grade elementary classroom teacher who was for a number of years a demonstration teacher for one of the long-time authorities in the teaching of elementary science. This teacher has had first-hand experience as a television teacher, in addition to her extensive classroom experience. Class reactions to the music and paintings in the preparation sequence were based on actual class reactions, recorded by this teacher.

The teacher used as a model here is an inspiring teacher, with an unflagging faith in her pupils' ability to "think big, see far, feel vividly, and probe deep." Her classroom walls carry such sentiments as "Science is great, but you are greater than science." "If I have seen farther than other men, it is because I have stood on the shoulders of giants." "Television," she says, "let us stand on the shoulders of giants." In a more humorous vein, she refers to television as a "leaping resource." "It enables us to jump further than we could jump by ourselves." This teacher is convinced that "when a normal child says, 'I can't,' he is simply telling us, 'Some teacher didn't!'"

The pupils breathing her classroom atmosphere feel free to express their reactions in their own personalized terms, to think aloud, to tackle big problems, without fear of failure or ridicule. Their vocabulary expands as their probing constantly deepens.

Their school, from which we took specifications for our classroom in the film, was built about 13 years ago as a model of (then) the most contemporary school planning. This school and its representative classroom were chosen for the film because in physical accommodations they offer a median model between the older, more rigid traditional buildings and the newest of highly-flexible designs which have at present few counterparts among our schools.

Classroom materials (for display and learning) were made by pupils and teachers of this school, and a sixth-grade classroom teacher supervised the classroom setting.

PRECEDING PAGE BLANK-NOT FILMED

UTILIZATION PROCEDURES

USED BY CLASSROOM TEACHER

(Mrs. Arnold in "A Case Study in the Elementary School")

PREPARATION FOR THE LESSON

Three days before the lesson:

Picture study, music, discussion: to introduce a new science topic, to stimulate interest, to arouse emotion, and to probe for the extent of knowledge and interest, already present...to lead the pupils into a consideration of how man learns new things and adds to his existing fund of knowledge...to define the major problems in question form.

Self-directed reading (school library and home): to increase knowledge and encourage further thinking.

Listing of questions by pupils: to organize their own knowledge... to discover what they know and what they need to find out... to provide a frame of reference for watching the television lesson.

Two days before the lesson:

Self-directed reading continued.
Listing of questions continued.

Vocabulary drill (on words the pupils needed to know, as revealed from their reading and discussion, and as suggested in the Teacher's Guide).

One day before the lesson:

Preparation for viewing: Exploring of anticipated lesson content... the "what" of the lesson. Further discussion of man's motivations toward and away from exploration of the unknown, discovery and learning.

The day of the lesson:

Review of two big questions for which the class wants to find answers.

Formulation of hypothesis concerning nature of answers.

THE LESSON

(Utilization procedures during the lesson are considered somewhat extensively in "Role of the Classroom Teacher." This film concerns itself, therefore, with "preparation" and "follow-through" activities.)

AFTER THE LESSON

Immediate and short-range activities

"Revisiting the lesson"

"Main Ideas" isolated and listed on chalkboard

Class questions classifieds how the lesson made us feel.

Class specifies new discoveries surprises we found in the lesson.

Members of class check their lists of questions against the lesson content to see which questions answered by presentation on screen and which ones need further exploration.

Review of two big questions.

Review of class-formulated hypotheses concerning ocean exploration.

Long-range group and individual activities

Groups exhibit and group reports "What Tipped the Scales Toward Knowing?"

Individuals Bryan - construction of graphics materials for group exhibit and report (panel with his result)

Allen - verbal report based on critical thinking (realistic, doubting, inclined to argue and question)

Scott - poster and notebook representing the complex of sciences represented in the ocean (factual result, interested in information)

David - artistic exhibit (imaginative, fond of words)

Lewis - summer day in the ocean (sensitive, fond of the dramatic, eager to emulate older brother)

SYNOPSIS OF THE COMPLETE TELEVISION LESSON

PORTIONS OF WHICH ARE USED IN THE FILM

This Part Seen in Film

The setting for our lesson is under the sea...on the shallow ocean floor of the Continental Shelf. The television teacher enters on a "baby" tractor...coming from behind a big craggy rock...drives to a standing, exciter stage, and stops. She gets off the tractor and says to the pupils:

"I just saw a baby who drinks a ton of milk a day!"

"Where? Right here...in the depths of the briny, treacherous, beautiful, vast and hostile ocean?

"How did I get here? I got here the same way you get lots of places you want to be. By imagination!

"And there is plenty of room for imagination in this strange new world of water. Not only because of the size...though that is tremendous. Three quarters of the earth is covered with water...three hundred thirty million cubic miles of it. The Continental Shelf alone is larger than all of Asia. But there is room for imagination, too, because we know so little about the ocean. And new things are being discovered every day!"

This Part of Television Lesson Is Not Seen in The Film

(While portion of the lesson is not seen on the film, the pupils in the film classroom are assumed to have seen the entire lesson.)

"Of course, we do know a number of things about the ocean," says the television teacher, "and some of them tell us that I couldn't be here like this, except in imagination. Why not? Which of you can tell your teacher at least two of the things that might happen to me?"

THE PAUSE FOR THE CLASSROOM TEACHER TO CALL ON A PUPIL IN THE CLASSROOM

"Yes," says the teacher, "my lungs are dry-land creatures. We're not properly constructed to live in the ocean. That's a non-human environment...a hostile environment. Take us just as we are...put us under the sea...and what do we remind you of?"

CLOSE UP, FULL SCREEN

"We see a fish on a table top, gasping for water.

THIS IS THE TABLE OF THE BOY SCIENTIST...IN THE STUDIO

"A fish out of water," says the television teacher. "A fish out of its element. A fish drowning in air."

"Now," she says, "There's a fish...trying to live in a human environment."

BRIEF FILM CLIP OF AN AQUANAUT
IN FULL GEAR SWIMMING UNDER WATER

"And here," says the teacher, "is a man trying to live in a fish environment." "Which one," she asks, "is doing better?"

"Ah," you say, "but if we put that fish in a fishbowl..." "

BOY SCIENTIST'S HAND PICKS UP FISH WITH A FISH STRAINER...
PUTS IT IN ROUND AQUARIUM...FISH RECOVERS

" "He'll be all right. There he can live in a human environment." "

"Is there something wrong with that reasoning," asks the television teacher, "and wants to tell your classmate teacher what it is?"

SHE PAUSES FOR THE CLASSROOM TEACHER TO CALL ON
A PUPIL

"I wonder," says the television teacher, "if you thought of the same things I did. In the first place..."

CLOSE UP, FULL SCREEN, THE FISH IN THE BOWL. CAMERA IS PULLED BACK TO SHOW BOY SCIENTIST AT THE TABLE WITH THE FISH AND THE FISHBOWL.

"...the fish is back in his own environment, isn't he? It isn't an ocean. It isn't a lake. It isn't a river. But it's water.

"And in the second place," says the teacher, "some human put him there."

"How long," asks the television teacher, "do you think it would take a fish to design an aquarium...a bowl of water...and put himself into it?"

(WE ARE SEEING ON SCREEN A CARTOON OF A FISH IN A LABORATORY...DRESSED AS A SCIENTIST...OF A RESEARCH DESIGNER...AT A DRAWING BOARD...DRAWING EXPERIMENTAL SPECIFICATIONS FOR A FISH BOWL. A CHART ON THE WALL BEHIND THE FISH SHOWS THE STEPS IN THE SCIENTIFIC METHOD. AS THE TELEVISION TEACHER'S VOICE IS HEARD OFF SCREEN, THE CAMERA IS MOVING IN CLOSE ON THE CHART...SO VIEWERS CAN READ THE WORDS ON THE CHART...DELINEATING THE SCIENTIFIC METHOD. THE CAMERA'S READING OF THE WORDS ON THE CHART IS CUED TO THE TEACHER'S DISCUSSION.)

"Well, let's see," says the television teacher..."First he'd have to define his problem, wouldn't he?" I'm not sure he'd ever do it. I'm not sure he'd ever solve his own problem of adapting to a new environment ...a hostile environment."

As we see the teacher again, she is saying:

"Now, something might do it for him...something besides men. Do you know what I'm talking about?" she asks the pupils. "Write down the word if you do."

SHE PAUSES TO LET PUPILS THINK AND WRITE, AND SHE WRITES A WORD ON A SMALL PAD IN HER HAND, OR ON A ROCK SHE HAS PICKED UP FROM THE OCEAN FLOOR... OR ON THE SAND OF THE OCEAN FLOOR.

"I've written 'Nature,' " she says to the pupils. "Perhaps you've written other words with the same idea. Nature would do it for him... just as Nature has put sharp, fierce teeth in this fish..."

THE BOY SCIENTIST IS PUTTING SOME PICTURES ON THE WALL, NEAR THE RAINBOW'S. THE CAMERA GOES IN FOR A CLOSE LOOK.

"...to deal with the land it finds at great depths. Just as Nature has put an eye in the tail of this fish so its enemies will think it's going another way...and a "warning-coat" around the body of this fish...to keep it from swimming into obstacles in the dark.

"Un-hunh!" says the teacher. "Some of you polished up your eye-reading ears over that. Suppose you write it down...

SUPER: "SEEING-EAR"

...and find out what you are about to hear us."

"Yes," says the teacher, "Nature might take care of that fish out of water, in the long, long, slow, slow, slow process of gradual adaptation to environment."

SUPER: ADAPTATION TO ENVIRONMENT

"And Nature might be willing to adapt man to life under water.

"But man's an impatient creature. And he's very, very curious about the things he doesn't know.

(DISSOLVE TO A FILM CLIP OF MEN LAUNCHING THE DIVING SAUCER...THEN DISSOLVE TO FILM CLIP OF UNDERWATER LANDSCAPE AS REVEALED BY THE LIGHTS OF THE SAUCER.)

"He wants to know the answers," continues the teacher, and we see the film clips. "He wants to solve problems. And he's not willing to wait. You might even say that man is a 'compulsive problem solver.' Do you know what 'compulsive' means?

SUPER: COMPULSIVE

"If we suppose you write it down...checking your spelling as you do so...because you may feel compelled to look it up!

"Because you like answers, too, don't you? After all," she tells the pupils, "you're men, you know. You're what we're talking about when we say, 'Man does this and man does that.' As a matter of fact, we're talking about you when we say 'Science does this or science does that.' Science doesn't do anything. Man does things...You do things... Through science."

"Let's look at our opponent again," says the television teacher.

(ON THE SCREEN IS SEEN THE SAME MAN IN THE UNDERWATER GEAR. SUPER "AQUANAUT.")

"There he is...an impatient, answer-hungry, compulsive-problem-solver man...trying to live in a non-human environment...a hostile environment...an environment that will kill him if he doesn't watch out. And He's Doing It!

"Here, the slow processes of Nature didn't do this. And Science didn't do this. Man did this...Through science.

"What did he do?" asks the teacher.

(WE SEE THE BOY SCIENTIST AT THE SCIENE TABLE, PUTTING A FLAT RUBBER STOPPER DOWN ON THE BOTTOM OF THE AQUARIUM, DEMONSTRATING DIFFICULTY IN GETTING IT UP. THEN WE SEE HIM TAKE A GLASS AND PUSH IT DOWN INTO THE WATER TO MAKE AN AIR POCKET.)

"He took what he remembered about air and air pressure," the teacher is saying, "and about containers that would hold air. He observed

SUPER: "OBSERVED"

the things around him...and with his human brain he put his memory and his observations together and he imagined...he guessed...he hypothesized

SUPER: "HYPOTHESIZED

an answer to his problem of breathing under water.

"If a fish could live in a bowl of water in the air..."

(WE SEE A CLOSE UP OF THE FISHBOWL WITH THE FISH IN IT.)

"...then man perhaps could live in a bowl of air in the water." So he experimented with that thought in his imagination..."

(THE CAMERA INVERTS THE IMAGE OF THE FISHBOWL ON THE SCREEN.)

"...turned that bowl of water upside down...let the air push the water out of it...saw in his mind the air pocket it made...and he got this

(THE INVERTED FISH BOWL DISSOLVES THROUGH TO A DIVING BELL.)

"That didn't suit him for long," says the teacher, "so he thought and observed and experimented a little while longer...and got this solution to his problem.

(THE DIVING BELL DISSOLVES THROUGH TO AN AUGUST SIEBE DIVING HELMET.)

"A little more exercise of his curiosity, his memory, and his imagination...got him this answer to his problem of survival in a non-human environment.

(THE HELMET DISSOLVES THROUGH TO A BATHYSPERE.)

"Man is still experimenting and he's getting more and better answers all the time. Who can tell your teacher about another one of them?"

SHE PAUSES FOR THE TEACHER TO CALL ON A PUPIL.

"Now, why does man keep on working at this," the teacher wants to know. "It's hard...dangerous...expensive. Men have lost their lives trying to live in this world of water...which is not man's natural environment.

She explains that man makes changes in his environment in an effort to solve some of his problems...to better his condition...and sometimes these changes create new and bigger problems...which he must solve in turn. Let's look at a few of these changes, she suggests, and see what new problems they've posed.

DEMONSTRATING WITH SHORT FILM CLIPS OR STILLS

The teacher points out that, in an effort to solve his problems of shelter, food, and workpower, man has improved his environment with tools and machines to make better things more quickly and easily;

FACTORIES POURING OUT SMOKE

to improve his movement through space, he has made changes in his transportation;

CAR, AIRPLANE, SHIP

to defend himself, he has changed his weapons;

ATOMIC BOMB

and he has made other changes to add years to his life, to improve his health, and to increase his numbers.

BABIES IN NURSERY

But what, she asks, is this doing to the space he needs, the amount of water he and his plants and animals require, and the air he breathes, his supplies of minerals and metals?

More and more, she says, the things in his natural dry-land environment that he needs to let him survive in health and comfort, are running short... very short.

(WE SEE A FILM CLIP OF EMACIATED, STARVING PEOPLE.)

About half the people in the world right now, says the teacher, are not properly fed. Almost a third of the human race knows actual hunger. Yet the population of the earth is increasing about a hundred-thousand every day.

(WE SEE THE POPULATION EXPLOSION COVER FROM LOOK AND DISSOLVE THROUGH TO CROWDED STREETS OR FAMILIES LIVING IN UNBELIEVABLY CROWDED CIRCUMSTANCES IN NEW YORK, LONDON, CHINA, SOUTH AFRICA.)

Food...enough food...is becoming one of man's greatest problems ...and water is becoming more precious every day.

(WE SEE A PICTURE OF A DROUTH-STRIKEN AREA OF FARM LAND.)

Man, says the teacher, must change his environment, look for new frontiers,...where these things which let him live long...in health and comfort...are in greater supply.

He has done this before, says the teacher, driven by the urges that push man into exploring new places. We have mentioned two, she reminds the pupils. "Need" and "curiosity." "Can you think of some others?"

"What pushed those men across the surface of the seas..."

(WE SEE A PICTURE OR FILM CLIP OF COLUMBUS'S VESSELS)

"...over that edge, for all they knew, and suddenly at the edge of a square world?"

"Or those men into the forests that held who knew what dangers?"

(WE SEE A PICTURE OF SETTLERS FELLING TIMBER TO BUILD HOUSES.)

"And what," asks the teacher, "pushed men finally out from among the sheltering trees into the strange, threatening vastness of the plains?"

(WE SEE A PICTURE OF THE PLAINS STRETCHING AWAY IN ALMOST ENDLESS FLATNESS.)

When man changes his environment, the teacher reminds the pupils, in an effort to solve his problems, he must then change to adapt to the changes.

"Take this axe, for instance."

(CAMERA MOVES IN CLOSE ON THE AXE IN THE PICTURE OF THE SETTLER FELLING TREES.)

"It was useless to him on the stretching plains where no tree grew. He must have looked at it...scratched his head...and said, 'Now, what can I do with this known...and now useless thing...to make it work for me in the unknown?' "

Can you think what he did do with it? How did he adapt this tool of the timberlands to the grassy, no-trees, flatness in which he now had to survive?

"Does this give you a clue?" asks the teacher.

(WE SEE A BRIEF FILM CLIP OF THE FLOW BREAKING THE PLAINS...AND MOVE IN CLOSE ON THE SHARP EDGE OF THE FLOW.)

"Well, now," says the teacher,"the forces are pushing man again. Out to the moon...where he does not know what he will find. But he knows what he will not find...

(WE SEE THE PICTURES OF THE MOON SURFACE.)

"He will not find food. He will not find water. He may not find shelter. He will not find air he can breathe...after spending billions of dollars and traveling unbelievable distances.

"Yet here...on the Continental Shelf...only a few hundred feet away...there is more food than has ever been thought of on land...water in some uncounted billions of gallons."

"Now," says the teacher..."let's look at some of the things a young scientist might see in his own home...things which are giving scientists good ideas about the ocean."

In a series of quick looks at simple limbo detail sets, we see the young scientist as he watches his mother running the vacuum cleaner... sees a pressure cooker on thestove...gets some ice cubes out of the refrigerator...sees his father fertilizing the flower bed.

"Do these things look useless in man's new environment?" asks the teacher. "They are not. One has already been used to save lives."

She shows a picture of the aquanauts carrying their life-saving parrot in a pressure cooker to their underwater home and laboratory. And soon, she says, she will show the pupils how another idea is being used in a very exciting way. Perhaps, she says, the pupils will find out about the others with investigations of their own.

<u>This is the Final Part of the Television Lesson -</u>

<u>the Part which we see in the Film</u>

The television teacher says that now that scientists have solved some of our problems of survival in the ocean...we're ready to explore some of its "practical promises."

As a result, the ocean is a busy place, with new discoveries being made everyday. She points out one of the underwater vessels which are always on the go, taking scientists and other guests on tours of exploration and observation.

The teacher says that one of the most exciting things under the ocean is the drilling method developed to get at the ocean's enormous oil reserves...and leads the viewer to the simulated superstructure of an ocean floor drilling rig, explaining that the drilling process is controlled from an anchored ship on the surface...with television cameras keeping watch.

She says some of the problems in drilling for oil under the ocean's surface were enormous and asks what the pupils think they were? How do the pupils imagine that they were solved?

The teacher mentions the great mineral wealth under the sea, and says that someday we may have help from the ocean itself in mining these minerals. As an example, she shows the lobster, which extracts cobalt from the water, and suggests that in the future we may have marine plants and animals to do our mining.

To demonstrate how the vacuum cleaner has been adapted, the teacher points out the nodule collector, invented by Oceanographer John L. Mero.

The teacher briefly discusses fish fossils and the problems involved in cultivating the "wings" of the ocean. And she suggests the possibility of whale ranching...saying she has found that the mother whale gives a ton of milk a day.

However, concludes the teacher, she's not sure she'd like the gills, which some people have suggested will one day be imposed on men by surgery, so he can breathe underwater.

"Whales don't need them," says the teacher. "I think I'd rather just get the whale to tell me her secret. What <u>would</u> it be?"

NOTES FOR THE VIEWER

Duplicate and give to students after Lesson

UTILIZING INSTRUCTIONAL TELEVISION

"A Case Study in the Elementary School"

TELEVISION UTILIZATION PROJECT

DEMONSTRATION KIT 5

TELEVISION

Is a relatively - instrument for communicating ideas

a versatile and valuable addition to the many ways we have to help children learn

a tool of instruction which is at its best when it is properly used

Is not "instant learning"

the "be-all-and-all" of classroom resources

infinitely superior to other methods of instruction

problem-free

THE CLASSROOM TEACHER

Is vitally important to the effective utilization of instructional television

important in the selection of appropriate television lessons and other materials, as the school's representative closest to the needs and problems of the classroom

in control of the learning situation, as *organizer* of the classroom and *director* of its important activities

responsible for integrating the resource, television, into the whole carefully-coordinated school program, for using it wisely and appropriately in conjunction with other resources.

It can be a welcome

an aid

a positive follower of television lessons but a dynamic USER!

Television can bring the child and the lesson together, but it is the classroom teacher who must apply THE GLUE TO MAKE THE LESSON STICK!

From reading how one sixth-grade teacher might use a television lesson on entomology to teach some basic science generalizations to introduce broader areas of understanding, to call upon personal strengths and to meet individual needs among her own pupils.

YOU MAY WANT TO REMEMBER

1. That proper utilization of television lessons involves more than tuning on the receiver.

2. That the classroom teacher must know the general purpose of the series (at what level of support it is to be used)...as well as the goal or purpose of the specific lesson, as it has been developed by the television teacher.

3. That the classroom teacher (in preparation for the lesson, during the lesson, and in weaving the lesson into the ongoing experiences of the pupils) must select those activities which will be most meaningful for her particular class at this particular time.

4. That activities which are appropriate for developing skills are not necessarily those most appropriate for developing attitudes or reinforcing knowledge or establishing values. The activity is not good or bad in itself, but as it relates to the goal to be achieved.

5. That the television teacher and classroom teacher are a team in the learning situation, with the television teacher's major responsibility centered on the content and the classroom teacher's major responsibility focused on individual needs and interests of the learners.

4. That the television teacher's primary concern must be on the elements common to all learners, while the classroom teacher's primary concern must be on the individual needs and interests of the learners.

5. That in assuming a large part of the processes of research, of collecting and preparing background material, making and exhibiting visuals, discovering and obtaining resources, the television teacher enables the classroom teacher to devote more time, attention, and energy to the important classroom tasks of guiding, directing, counselling, inspiring, encouraging progress, removing stumbling blocks from the paths of the pupils, as they move toward self-education.

6. That the classroom teacher is the creator of the climate of the classroom, and therefore instrumental in shaping the students' attitude toward television and the television teacher.

7. That the students must be aware of the relationship of the television segment to the total learning situation and of what they are expected to get from this lesson and how they are supposed to act as a result of having experienced it.

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APPENDIX A

FOUR TEACHING WAYS

IN WHICH INSTRUCTIONAL TELEVISION IS USED

In general, there are four levels of support at which instructional television operates. When decisions are made regarding the use of television in your classroom or school system, it is well to bear in mind that television can work in these different ways, and that a very important aspect of the decision-making function is to determine which level of support is most appropriate to your own situation. Crucial to the success of instructional television is a clear understanding, on the part of everyone involved in its use, as to just what can is anticipated for it and what role it is expected and designed to play in a particular school situation.

Level 1: Almost the entire basic body of course or lesson content is provided by the television teacher.

In some instances high school and college students have met requirements in some subjects by studying television courses without the aid of any classroom teacher.

In some instances, particularly in primary and secondary schools, the classroom teacher is present and is able to undertake classroom activities after he has learned something of the subject from the lessons on screen or by some other means.

This use is most often made when no teachers are available locally for specialized subjects, such as foreign languages, advanced mathematics, or science, or when the number of qualified teachers is far too small to serve the number of students needing the course.

Level 2: The television teacher presents the major content of a course or study unit, but the classroom teacher is in full control of the learning situation in the classroom and is director of the important classroom activities designed to reinforce, clarify, and extend the television material to bring about maximum learning.

Where television offers this level of support, the television teacher and the classroom teacher work as a team toward specific goals which both understand and approve. The specialized responsibilities of each team member complement the specialized responsibilities of the other team member.

In general, the television teacher is responsible for the common elements of information and interpretation needed by all the students and for opening doors to further exploration. The classroom teacher prepares the students for the television presentation and weaves it into the fabric of the total learning situation. As the specialist in the needs and interests of particular groups and individuals, the classroom teacher sees that learning is facilitated by other experiences, such as discussion, laboratory experiments, small group activities, practice and drill, creative expression, problem solving, individual diagnosis and remedial measures.

Level 3: The classroom teacher is responsible for the major course or study unit content, but looks to television for the special materials which are difficult or impossible for individual teachers to provide. Here television is a plus factor rather than an integral part of the main stream of the course. Though the television lessons or programs may follow the course direction in a general way, their primary purpose is to supplement and enrich, to provide the kind of faithful experiences which are stimulating and evocative but practically inaccessible to the regular classroom.

Here television may provide visits to exciting locales where it is not feasible for the viewing students to go in person. It may offer performances by artists or by musical, ballet, or dramatic groups, or demonstrations by those involved in the plastic arts. It may bring rare artifacts or outstanding specialists into the classroom.

Used at this level, television's primary aim is extending dimensions of the classroom toward increased experience, enhanced appreciation, or heightened interest.

Level 5: Instructional television is used for purely educational purposes, to provide a better view...sometimes a superb view...of important objects or processes. Its ability to offer a close, precisely-focused view has few rival dimensions, has made instructional television invaluable in many areas of professional training. It can offer a superior close-up observation of dental manipulations to large groups of students. It can bring the details of a critical operation right up before the eyes of medical students.

A microscope slide or a crucial step in a science experiment may be seen simultaneously by all the students in a large lecture hall-demonstration room.

Student observation of psychological counseling or therapy, or of child behavior and demonstration teaching may be greatly facilitated with closed-circuit television equipment.

A speech teacher may use television to give all students a close-up view of oral techniques for sound production. A foreign language teacher may give each student a closer look at the work done by lips, teeth, and tongue in producing unfamiliar sounds.

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APPENDIX B

STRENGTHS AND LIMITATIONS OF INSTRUCTIONAL TELEVISION

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APPENDIX C

RESPONSIBILITIES OF THE TELEVISION TEACHER

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APPENDIX D

WHAT INSTRUCTIONAL TELEVISION RESEARCH TELLS US

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APPENDIX E

HISTORY OF EDUCATIONAL TELEVISION

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APPENDIX F

DEVELOPMENT OF EDUCATIONAL TELEVISION

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APPENDIX C

TELEVISION RECEIVERS FEATURE FOR CLASSROOM USE

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APPENDIX H

SAMPLE TEACHER'S GUIDE

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GLOSSARY

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